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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/751,999	12/29/2000	Ali Najib Saleh	CIS0008C1US	8353

33031   7590   07/11/2008
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EXAMINER
NGUYEN, HANH N

ART UNIT	PAPER NUMBER
2616	

MAIL DATE	DELIVERY MODE
07/11/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 June 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *See Continuation Sheet* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *38-53, 55-70, 111, 118, 124, 131, 137, 144, 150, 157, 163, 165-168, 177, 179-182, 191, 193-196, 205, 207-210* is/are rejected.

7)☒ Claim(s) *See Continuation Sheet* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application
6)☐ Other: _____ .

Continuation of Disposition of Claims: Claims pending in the application are 38-70,111,113-124,126-137,139-150,152-163,165-177,179-191,193-205 and 207-218.

Continuation of Disposition of Claims: Claims objected to are 54,113-117,119-123,126-130,132-136,139-143,145-149,152-156,158-162,169-176,183-190,197-204 and 211-218.

DETAILED ACTION

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 112

Regarding claims 205, 207-218 respectively, the word "means" is preceded by the word(s) "for receiving; for processing , for sending; for determining; for adding; for discarding ; for indicating in each of the claims" in an attempt to use a "means" clause to recite a claim element as a means for performing a specified function. However, since no function is specified by the word(s) preceding "means," it is impossible to determine the equivalents of the element, as required by 35 U.S.C. 112, sixth paragraph. See *Ex parte Klumb,* 159 USPQ 694 (Bd. App. 1967).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 38-52, 55, 56, 57-68 are rejected under 35 USC 103(a) as being unpatentable over Spiegel et al. (US pat. 5,649,108) in view of Peerlman (US Pat. 5,455,865).

In claim 38, 39, 49, 50, 51,57, note; the protocol packet is further defined in claim 62 as "a create path packet"; claim 70 as "a configure packet". Therefore,

examiner cites "a request/connection setup packet" in Spiegel as one of these packet

above. Spiegel et al. discloses a method comprising transmitting a protocol packet from

an origin node to neighbors of the origin nodes to find the target node (see ATM

network in figure 1, fig.2, and fig. 4; source node transmits a request/connection setup

packet via intermediate nodes to destination node; col.5, line 35 to col.6, line 50; and a

souce route is searched through network along nodes based on least cost); the

protocol packet is configured to record a protocol packet path from the origin node to

the target node (see fig.3, col.5, lines 62 to col.6, line 15; each a connection setup

packet contains source address, destination address (for claim 39), a source route

which is a list of nodes that the connection setup packet should pass through, and a

record route which is a list of nodes through which the connection has already been

established); the protocol packet comprises information regarding a topology of at least

a portion of said network (the topology of the at least a portion of network is source

address, destination address, VCI (claim 49), cost 35 (claim 50), QOS parameters (

claim 51; col.6, lines 45-52); a source route and a record route). Spiegel does not

disclose broadcasting the protocol packet to a plurality of neighbors of said origin node.

Perlman discloses in fig.l, a source node 16 transmits a data packet to a destination

node 24 via alternative routes (see col.4, lines 45-60). The source node 16 first

identifies its neighbor nodes by broadcasting link state packet to entire network (see

col.6, lines 1-7 and step 94 in fig.3B). The link state packet comprises neighbor ID's 78

(see fig.3A, col.6, lines 28-32). Therefore, it would have been obvious to one ordinary

skilled in the art to combine the teaching of broadcasting link state packet to neighbor

nodes of Perlman with the teaching of Spiegel in order to determine network topology

before transmitting packet from source to destination and avoid link failure during

transmission.

Claims 40, 47 are rejected under 35 USC 103(a) as being unpatentable over

Spiegel et al. (US pat. 5,649,108) in view of Peerlman (US Pat. 5,455,865) , and

further in view of Chou (US pat. 5,850,526).

In claims 40, 47, Spiegel et al. does not disclose header includes a flush

indication field. Chou discloses in fig.6, col.8, lines 30-45, a header of a packet

transmitted from a source device comprises flush bit 78 set by the source node (

header includes a flush indication field). Therefore, it would have been obvious to one

skilled in the art to comprise a flush bit into the header of connection setup packet to

release resource for other connection.

Claims 43, 44 are rejected under 35 USC 103(a) as being unpatentable over

Spiegel et al. (US pat. 5,649,108) in view of Peerlman (US Pat. 5,455,865) , and

further in view of Waclawsky et al. (US pat. 5,197,127).

IN claims 43, 44, Spiegel et al. discloses as connection through network is

blocked, a NACK is transmitted to source node (see col.7, lines 30-35) , but there is no

indication of a request/response or negative response indicator fields described in

Spiegel. Waclawsky et al. discloses in fig.2, header 62 of a packet comprises a

request/respponse bit REQ/RESP bit 14 (see col.3, lines 25-32). Therefore, it would

have been obvious to one skilled in the art to comprises the request/response bit 14 into

the connection setup packet of Spiegel et al. to indicate whether the transmitted packet is received or not at the destination node.

In claims 41, 45, Spiegel et al. discloses fig.4, in col.7, lines 30-45 if the connection through the network is blocked, controller 12 of source node sends a release packet via other nodes and the corresponding entry of that connection in the forwarding table is also removed. Eventhough the terminate path indicator field is not explicitly disclose in the release packet, but the transmitting of release packet to indicate the connection being blocked is well-known to one skilled in the art that there must be some indication in the release packet shows that the connection has been blocked and removed. The indication is obvious to include a terminate path indicator field.

Claims 42, 46 are rejected under 35 USC 103(a) as being unpatentable over Spiegel et al. (US pat. 5,649,108) in view of Peerlman (US Pat. 5,455,865) , and further in view of Martin et al. (US pat. 6,092,086).

In claims 42 and 46, Spiegel does not disclose a commit path indicator field. Martin et al. discloses in fig.32, step 896, a packet is created with a commit flag (commit path indicaator field). Therefore, it wouldhave been obvious to one skilled in the art to have a commit flag comprised in connection setup packet of Spiegel et al. to indicate whether a specific path has been committed to by other nodes.

In claim 48, the specification in page 52, lines 17-20 describes the initialize packet as protocol packet, therefore, the protocol packet disclosed by Spiegel in claim 38 is initialize packet.

Claim 52 is rejected under 35 USC 103(a) as being unpatentable over Spiegel et al. (US pat. 5,649,108) in view of Peerlman (US Pat. 5,455,865) , and further in view of Bare (US pat. 6,865,160 B1).

In claim 52, Spiegel et al. does not disclose hello interval field and hello dead interval field. Bare discloses hello interval (see col.18, lines 35-45; hello requests sent at one second intervals for 5 seconds) and hellodeadinterval (col.17, lines 50 to col.18, line 20 if deadcount hello intervals go by without receiving a hello packet on a link that had previously been receiving hello packets, the link is no longer exist). Therefore, it would have been obvious to one skilled in the art to combine the deadcount hello intervals as hellodead interval in the packet of Spiegel et al. to help the source node transmitting hello packet determine that the hellopacket is not acknowledged after waiting a time period.

In claims 40 and 47, discloses the header data comprises a flush field

In claim 58, Spiegel et al. discloses protocol packet is restore path packet (see fig.3, step 306; col.5, lines 47-53 or pack message at fig.5, steps 504).

In claim 55, Spiegel discloses link state advertisement field (control flag 38; fig .3).

In claim 56, Spiegel et al. discloses a neigbor field (destination node 31 ; fig.3) ; and a link cost field (see fig.3, cost 35)

In claim 59, Spiegel et al. discloses a virtual path ID field (see fig.2; forwarding table 20 including VCI identification and fig.3, VCI 32).

In claim 60, Spiegel et al. discloses a path length field / link cost field (see fig.3, soure route 33, cost 35).

In claim 62, Spiegel et al. discloses protocol packet is a create path packet (connection/setup path packet; see claim 38).

In claim 61, Spiegel et al. discloses path array (fig.1 shows spans AB, BD, DF, FG).

In claims 63 and 65, the limitations of this claim have been addressed in claims 59, 60 and 61.

In claim 64, Spiegel et al. discloses a delete path packet (see fig.4, step 55; VC connection request is rejected; col.7, lines 50-55).

*In claim 67, Spiegel et al. discloses identifying eligible neighbor nodes of said origin node (see fig.4, step 41, find shortest path from routing table; col.6, lines 50-54), wherein said eligible neighbor nodes are nodes that are suitable for a virtual path between said origin node and said target node (as shown in fig.4, step 40, col.6, lines 40-47; the shortest path is a requested virtual circuit), and said protocol packet is broadcast to each of said plurality of eligible neighbor nodes (disclosed in claim 38; see Perlman; col.6, lines 1-7 and step 94 in fig.3B; the source node 16 first identifies its neighbor nodes by broadcasting link state packet to entire network).

In claims 66 and 68, the combination of Spiegel et al. and Perlman discloses the protocol packet is a get link state advertisement packet (see Perlman in fig.3A, link state packet 68; col.6, lines 10-30) and test packet (see col.5, lines 58-67, transmitting handshake packet to verify identities of neighbor nodes).

*Claims 111, 124, 131, 137, 144, 150, 157, 163, 177, 191, 205 are rejected under 35

USC 102(e) as being anticipated by Fukushima et al. (Pat. 6,490,246 B2).

In claims 111,124, 137, 150, Fukushima et al. discloses, a method of processing a get

link state advertisement packet comprising receiving the get link state advertisement

packet (fig.8, step 121, receiving a Hello packet/routing protocol packet) at a

downstream node (at routers 30; co1.10, lines 20-25; fig.l), wherein the get link state

advertisement packet (the Hello packet) is sent by a sending node (from router

calculating unit 11; fig.2), the get link state advertisement packet comprises at least one

node identifier (see co1.1, lines 45-50; the hello packet comprises a list of other

routers'lds in the same network); said at least node Id (each router) identifies a node in

the network for which the sending node seeks link state advertisement (see col.2, lines

15-20; checks if each of routers has received network link state information and in col.2,

lines 27-32, " if there is any other router from which the router has not received hello

packet for longer than a fixed period, the router decides that a failure has occurred in

this other router"). The downstream node and said sending node are nodes in the

network (the two routers are connected to the same network); sending at least one link

state advertisement from the down stream node to the sending node (fig.8, steps 122,

124 and fig.9, steps 131,133; network link state information received from neighbor

node); and sending an acknowledgement of the at least one link state advertisement to

the downstream node (fig.9, step 135 and fig,lO, step 143, sending update

information).

In claims 163, 177, 191 and 205, Fukushima et al. discloses receiving a hello

packet at a downstream node, wherein said hello packet comprises a link state

advertisement (see see co1.10, lines 15-30, fig.8, step 121, router 30 receives hello

packets, wherein the hello packet comprises network link state information. See step

124); processing said link state advertisement comprises sending said link state

information from down stream node (see fig.8, steps; 125 co1.10, lines 25-30; sending

the network link state information to protocol information manager module 15); sending

link states acknowledgement from the downstream node (see fig.8, step 125, co1.10,

lines 26-40; the sending of network link state information is an acknowledgement which

the manager 15 checks if the received information is the network linkstate information,

see fig.9, steps 131,133).

Claims 53, 69, 70, 118, 131, 144, 157 are rejected under 35 USC 103(a) as being

unpatentable over Spiegel et al. (US pat. 5,649,108) in view of Fukushima et al. (Pat.

6,490,246 B2).

*In claim 53, Spiegel et al. does not disclose the protocol packet is a hello

packet. Fukushima et al. discloses in figure 8, step 121, the packet received at the node

is protocol packet such as hello packet (see co1.10, lines 20-25). Therefore, it would

have been obvious to transmit protocol/hello packet in Spiegel et al. to update network

topology.

In claims 69 and 70, Spiegel does not discloses protocol packet is a link down

packet. The office notice notice is taken that it is well-known skill in the art that when a

link or a router is down, a protocol packet such as a link down packet is transmitted to the sender router to notify that the router has been down. For the configured packet, Fukushima discloses, in col.2, lines 25-35, that if a router has not received hello packet from other routers for longer than a fixed period, the router updates the contents of routing table and establishes another path to avoid the faulty router (protocol packet is a configure packet). Therefore, it would have been obvious that the protocol packet can be a link down packet to notify that a router has failed or a configured packet when the router establishes an alternate path.

In claims 118, 131, 144, 157, Spiegel does not disclose identifying at least one link state advertisement in a link state database maintained at said downstream node using at least one node identifier. Fukushima et al. discloses identifying at least one link state advertisement in a link state database maintained at said downstream node using at least one node identifier (see fig.2, col.5, line 55 6o col.6, line 8; storing LSA Link state database 22 at router 10). Therefore, it would have been obvious to one skilled in the art to apply the link state database into Spiegel et al. to identify network topology.

*Claims 165-176, 179-190 and 193-204, 207-218 are rejected under 35 USC 103(a) as being unpatentable over Spiegel et al. (US Pat. 5,649,108) in view of Fukushima et al. (Pat. 6,490,246 B2).

In claims 165, 166, 167, 168, 179, 180, 181, 182, 193, 194, 195,196, 207, 208, 209, 210, Spiegel et al. does not disclose determining if said LSA corresponds to an entry in a link state database maintained at said downstream node; If the LSA is not a

corresponding to an entry in a Link state database, adding the LSA to said link state database; and if said LSA corresponds to an entry in a LSDB , determining if a node orginating said LSA is a node originating a LSA corresponding to said entry in said link state database.

Fukushima discloses determining if said LSA corresponds to an entry in a link state database maintained at said downstream node (see fig.9, col.10, lines 35-45; step 131, 133; determing if the received LSA the same with contents in link state database 22); If the LSA is not a corresponding to an entry in a Link state database, adding the LSA to said link state database (fig.9, col.10, lines 42-52; steps 133&134; if the received LSA does not agree with contents in the LSDB 22, updating the link state database 22 comprising adding new LSA to the LSDB 22); and if said LSA corresponds to an entry in a LSDB , determining if a node orginating said LSA is a node originating a LSA corresponding to said entry in said link state database (see fig.9, step 133; col.10, lines 46-52; if agreement is confirmed, no need to update the LSDB 22 which means that one node send a LSA and another LSA in the LSDB 22). Therefore, it would have been obvious to one skilled in the art to use the teachings of Fukushima into Spiegel et al. to determine whether the LSA corresponds to a LSA entry in LSDB; or update the LSDB by adding the new LSA.

Allowable Subject Matter

Claims 113-117, 119-123, 126-130, 132-136, 139-143, 145-149, 152-156, 158-162, 169-176, 183-190, 197-204, 211-218 are objected to as being dependent upon a

rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

IN claims 113, 119, 126, 132, 139, 145, 152, 158, the prior art fails to disclose building a first list from a link state database maintained at said downstream node, wherein said first list comprises any link state advertisements received from a node other than said sending node, and said at least one link state advertisement is among said any link state advertisements received from said sending node.

In claims 169, 183, 197, 211, the prior art fails to disclose determining if said link state advertisement is more recent than said link state advertisement corresponding to said entry in said link state database.

Response to Arguments

Applicant's arguments filed on 6/13/08, have been fully considered but they are not persuasive.

Regarding claim 38, Applicant argues on the specification, page 37-40, that the combination of Spiegel et al. does not disclose broadcasting said protocol packet to a plurality of neighbors of origin node to find a target node.

Applicant is referred to Spiegel et al. in col.5, lines 52-60; figures 1 and 2 wherein as a source node A finds a source route to destination node G, routing table 13 at each node is searched to find nodes along a source-to-destination route based on least cost . This expresses a source route is searched by each node from source node A to destination node G. For further understanding, applicant is referred to see figures 6A-6G and 7A-7D.

Regarding claims 111, 124, 137, 150, applicant argues on pages 42-45 that

Fukushima et al. does not disclose said at least one node identifies a node in a network

for which said sending node seeks link state advertisement. Examiner does not agree

because in Fukushima et al., the network link state information exchanged between two

routers include ID of the advertising router (ID of the sending node), identity of the

network as well as the address of interface to which the advertising router is connected

(see co1.1, lines 60- 65). Further (in col.2, lines 10-20), each router while receving

hello packets and network link state information, manages states of other routers on the

network to which this router is connected. The each router manages the routers' ID's,

and checks if each of those routers is aware of this router, or checks if each of those

routers has completed the reception of network link state information (the fact that each

of those routers has received the network link state information clearly indicates that the

received network link state information has an identifier identifying a node for which the

network link states information is destined).

Regarding claims 163, 177, 191 and 205, applicant argues in the Remark, pages

45-47 that Fukushima et al. does not disclose sending the link state information from the

down stream node and sending an ACK from the down stream node. Examiner does

not agree because Fukushima et al. discloses receiving a hello packet at a downstream

node, wherein said hello packet comprises a link state advertisement (see see co1.10,

lines 15-30, fig.8, step 121, router 30 receives hello packets, wherein the hello packet

comprises network link state information. See step 124); processing said link state

advertisement comprises sending said link state information from down stream

node (see fig.8, steps; 125 co1.10, lines 25-30; sending the network link state

information to protocol information manager module 15); sending link states

acknowledgement from the downstream node (see fig.8, step 125, co1.10, lines 26-40;

the sending of network link state information is an acknowledgement which the manager

15 checks if the received information is the network linkstate information, see fig.9,

steps 131,133).

Conclusion

The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

Perlman et al. (US Pat. 5086428);

Butler et al. (US Pat. 4,654,654).

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Hanh Nguyen whose telephone number is 571 272

3092. The examiner can normally be reached on 8:30 to 4:30. The examiner can also

be reached on alternate .

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Lynn Feild, can be reached on 571 272 2092. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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Business Center (EBC) at 866-217-9197 (toll-free).

/Hanh Nguyen/
Primary Examiner, Art Unit 2616